

REMARKS

By the present amendment, the specification has been amended to insert section subtitles and the abstract has been amended to avoid legal phraseology.

Claim 1 has been amended to replace the expression “the or each post-injection” by “the post-injections” and by adding “during this stage in which the engine is returning to idling as a result of the accelerator pedal being raised” at the end of the clause. It is submitted that these clarifications are to improve legibility and do not modify the scope of the claims.

Dependent claims 7-10 corresponding to claims 3-4 but dependent on claims 2-3, respectively, have been added.

New method claims 11-20 corresponding to claims 1-10 have also been added.

The present application is a national stage of a PCT application, so that “unity of invention” rules apply. Here, the system and method claims have a common special technical feature under “unity of invention” rules. Accordingly, it is submitted that system and method claims should be examined together in this application.

Claims 1-20 are pending in the present application. Claims 1 and 11 are the only independent claims.

I. **Objection to the specification**

In the Office Action, the abstract is objected to as including legal phraseology “means,” and the specification is objected to as missing section subtitles.

The abstract has been amended to avoid legal phraseology and the specification has been amended to add section subtitles. Accordingly, it is submitted that the objection should be

withdrawn.

II. Objection to the claims

In the Office Action, claims 2-3 are objected to. It is alleged that “comprise” should be “comprised.”

Claims 2-3 have been amended as suggested in the Office Action. Accordingly, it is submitted that the objection should be withdrawn.

III. Obviousness rejections

In the Office Action, claims 1, 2, and 6 are rejected under 35 U.S.C. 103(a) as obvious over US 6,931,842 to Ohtake et al. (“Ohtake”) in view of US 6,594,990 to Kuenstler et al. (“Kuenstler”).

Further, in the Office Action, claim 3 is rejected under 35 U.S.C. 103(a) as obvious over Ohtake in view of Kuenstler and further in view of US 2002/0007629 to Asanuma et al. (“Asanuma”).

Also, in the Office Action, claims 4-5 are rejected under 35 U.S.C. 103(a) as obvious over Ohtake in view of Kuenstler and further in view of US 4,655,037 to Rao (“Rao”).

It is alleged in the Office Action that Ohtake discloses a system as in present claim 1 except for the OSC device, and that Kuenstler discloses such OSC device to facilitate soot combustion, so that it would have been “routinely practiced” to use the OSC device of Kuenstler in Ohtake (Office Action at page 5, first paragraph).

Reconsideration and withdrawal of the rejections is respectfully requested. It is submitted that the present invention attempts to solve the problem of the dip in exhaust temperature when the

accelerator pedal is being raised, which causes (i) post-injected fuel that remains unoxidized after passing through the oxidation catalyst, and (ii) oil dilution in the post-injected fuel (see present specification at page 2).

Thus, the solution proposed by the present invention is to use a predetermined maximum duration threshold for applying post-injections. When this threshold is reached, post-injections are immediately cut off.

In contrast, Ohtake attempts to solve a problem which is completely different and even at the opposite, i.e., where a fast deceleration of the engine speed leads to a temperature increase in the particle filter, because the reduced flow of exhaust gas provides enough oxygen to burn the soot but fails to remove sufficient heat from the particle filter (see Ohtake at col. 1, lines 22-32).

In addition, the solution proposed by Ohtake is also completely different from the solution of the present invention.

Namely, step S36 of Ohtake is not a cutoff of the post-injections after a predetermined time as a function of the temperature, but a cutoff of regeneration after a “predetermined time,” i.e., a fixed regeneration time (see col. 8, lines 57-67 of Ohtake) which is independent (i) from the exhaust temperature and (ii) from whether there is a deceleration or not. Thus, Ohtake does not determine a maximum duration for applying post-injections on the basis of said temperature during this stage, as recited in present claim 1.

Also, in the passage at col. 9, lines 39-51 of Ohtake to which reference is made in the Office Action, the system of Ohtake controls “post-injection amounts,” but this means the amount injected through each post-injection event within a single engine cycle, and not a cumulative

maximum amount during a period when the accelerator pedal is raised. Thus, Ohtake does not cut off the or each post-injection as soon as the duration of postinjection use has reached the predetermined maximum duration of application.

In summary, Ohtake fails to disclose both the objective of the invention (increase the exhaust temperature during certain operating times of the engine) and the manner of reaching this objective (setting a cumulative maximum amount to be injected by post-injections during the period, and cutting off post-injections when this time period has elapsed).

In contrast, in the presently claimed invention, (i) a maximum duration for applying postinjections during a stage in which the engine is returning to idling as a result of the accelerator pedal being raised can be determined on the basis of the acquired temperature downstream from the catalyst, and (ii) the postinjections can be cut off as soon as the duration of postinjection use has reached the predetermined maximum duration of application during this stage in which the engine is returning to idling as a result of the accelerator pedal being raised, as recited in present claims 1 and 11. These features of the presently claimed invention are not taught or suggested in Ohtani, which attempts to solve a different problem and does not provide any suggestion, motivation or other incentive to use a predetermined maximum duration threshold for cutting off postinjections. Further, the other cited references fail to remedy the deficiencies of Ohtake. Therefore, the present claims are not anticipated by Ohtake, and not obvious over Ohtake taken alone or in any combination with the other cited references.

Amendment
U.S. Appl. No.: **10/595,624**
Attorney Docket No. **LAV0313156**

Further, with respect to the dependent claims, it is submitted that the cited references fail to teach or suggest the combined features of each of these claims. Therefore, each of these respective claims is not obvious over the cited references taken alone or in any combination.

In view of the above, it is submitted that the rejections should be withdrawn.

In conclusion, the invention as presently claimed is patentable. It is believed that the claims are in allowable condition and a notice to that effect is earnestly requested.

In the event there is, in the Examiner's opinion, any outstanding issue and such issue may be resolved by means of a telephone interview, the Examiner is respectfully requested to contact the undersigned attorney at the telephone number listed below.

In the event this paper is not considered to be timely filed, the Applicants hereby petition for an appropriate extension of the response period. Please charge the fee for such extension and any other fees which may be required to our Deposit Account No. 502759.

Respectfully submitted,

/nicolas seckel/

Nicolas E. Seckel
Attorney for Applicants
Registration No. 44,373

Nicolas E. Seckel
Patent Attorney
1250 Connecticut Avenue, NW Suite 700
Washington, DC 20036
Tel: 202-669-5169
Fax: 202-822-1257
Customer No.: 29980
NES/rep